

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Continuation of Application No: 09/647,614

ARAI, Yoshihide

Appln. No.: Not Yet Assigned

Group Art Unit: Not Yet Assigned

Confirmation No.: Not Yet Assigned

Examiner: Not Yet Assigned

Filed: January 2, 2002

For: ULTRAVIOLET-CURING COMPOSITION

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE SPECIFICATION:

The specification is changed as follows:

Amend the specification by inserting before the first sentence:

This is a continuation of Application No. 09/647,614 filed October 3, 2000; the disclosure of which is incorporated herein by reference.

On page 4, last paragraph bridging page 5:

Alternatively, the ultraviolet-curing composition for assembling hard disk drives of the invention is characterized in that said urethane (meth)acrylate, which is the above-described curable component of said ultraviolet-curing composition, is a product of an addition reaction, using an organic zinc or an amine compound as a catalyst, between:

On page 5, 4th paragraph:

Alternatively, the ultraviolet-curing composition for assembling hard disk drives of the invention is characterized in that said urethane (meth)acrylate, which is the above-described curable component of said ultraviolet-curing composition, is a product of an addition reaction, using an organic zinc or an amine compound as a catalyst, between:

IN THE CLAIMS:

Please cancel claims 1-4 without prejudice or disclaimer.

Please add the following new claims:

5. (New) A method of manufacturing a hard disk drive assembly comprising the steps of:

providing components of a hard disk drive assembly;
providing an ultraviolet-curing composition having a curable component; and
fixing or bonding components of said hard disk drive assembly using the ultraviolet-curing composition,

wherein said curable component of said ultraviolet-curing composition is a urethane (meth)acrylate obtained by an addition reaction, using an organic zinc compound or an amine compound as a catalyst, between (1) an isocyanate group of an isocyanate oligomer, which is prepared by using an organic zinc compound or an amine compound as a catalyst in an addition reaction between an isocyanate group and an active hydrogen; and (2) a hydroxy group of a hydroxyalkyl (meth)acrylate.

6. (New) The method according to claim 5, wherein said urethane (meth)acrylate is a product of an addition reaction, using an organic zinc compound or an amine compound as a

catalyst, between:

an isocyanate group of an isocyanate oligomer, which is prepared, by using an organic zinc compound or an amine compound, from a polyether having a hydroxy group at a terminal thereof and an isocyanate compound having two or more isocyanate groups per molecule; and
a hydroxy group of a hydroxyalkyl (meth)acrylate,
wherein no tin compound is used as a catalyst in these two addition reactions.

7. (New) The method according to claim 5, wherein the urethane (meth)acrylate, which is a main component of said ultraviolet-curing composition, is a product of an addition reaction, using an organic zinc compound or an amine compound as a catalyst, between:

an isocyanate group of an isocyanate oligomer, which is prepared, by using an organic zinc compound or an amine compound, from a polyester having a hydroxy group at a terminal or in a side chain thereof and an isocyanate compound having two or more isocyanate groups per molecule; and

a hydroxy group of a hydroxyalkyl (meth)acrylate,
wherein no tin compound is used as a catalyst in these two addition reactions.

8. (New) The method according to claim 5,

wherein the polyurethane (meth)acrylate, which is a main component of said ultraviolet-curing composition, is a product of an addition reaction, using an organic zinc compound or an amine compound as a catalyst, between:

an isocyanate group of a polyether/polyester copolymerized isocyanate oligomer compound, which is prepared by an addition reaction among a polyester having a hydroxy group at a terminal or in a side chain thereof, a polyether having a hydroxy group at a terminal thereof,

and a diisocyanate compound having two or more isocyanate groups per molecule; and a hydroxy group of a hydroxyalkyl (meth)acrylate,

wherein no tin compound is used as a catalyst in these two addition reactions.

9. (New) The method according to claim 5, wherein the ultraviolet-curing composition forms a flange gasket of a hard disk drive housing case.

10. (New) The method according to claim 5, wherein the ultraviolet-curing composition fixes a cap seal to a hard disk drive spindle motor.

11. (New) The method according to claim 5, wherein the ultraviolet-curing composition fixes a magnetic head of a hard disk drive to a supporting arm.

12. (New) The method according to claim 5, wherein the ultraviolet-curing composition fixes a packing or packings in a housing case of a hard disk drive assembly.

13. (New) The method according to claim 5, wherein the ultraviolet-curing composition bonds substrates to connectors in the hard disk drive assembly.

14. (New) The method according to claim 5, wherein the hard disk drive assembly comprises at least the following components:

a hard disk for storing data;

a spindle motor for rotating the hard disk;

a cap seal affixed to the spindle motor;

a movable read/write magnetic head or heads positioned relative to the hard disk such that data may be written on or read from the hard disk using the magnetic head;

and a housing case for the hard disk, the spindle motor and the magnetic head.

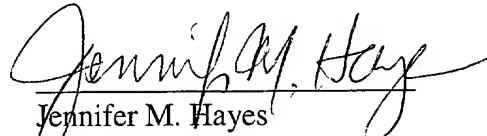
REMARKS

The amendment to the specification corrects editorial errors contained in the Japanese language text as originally filed in the PCT application. The amendment to page 4 of the specification is supported by the paragraph bridging pages 4-5 of the specification, which clearly shows that the curable component is a urethane (meth)acrylate. The same is true of the amendment to page 5 of the specification.

Support for the new claims is found in original claims 1-4 and in the specification on pages 10-11.

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,


Jennifer M. Hayes
Registration No. 40,641

SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

Date: January 2, 2002

providing components of a hard disk drive assembly;
providing an ultraviolet-curing composition having a curable component; and
fixing or bonding components of said hard disk drive assembly using the ultraviolet-curing composition,

wherein said curable component of said ultraviolet-curing composition is a urethane (meth)acrylate obtained by an addition reaction, using an organic zinc compound or an amine compound as a catalyst, between (1) an isocyanate group of an isocyanate oligomer, which is prepared by using an organic zinc compound or an amine compound as a catalyst in an addition reaction between an isocyanate group and an active hydrogen; and (2) a hydroxy group of a hydroxyalkyl (meth)acrylate.

6. (New) The method according to claim 5, wherein said urethane (meth)acrylate is a product of an addition reaction, using an organic zinc compound or an amine compound as a catalyst, between:

an isocyanate group of an isocyanate oligomer, which is prepared, by using an organic zinc compound or an amine compound, from a polyether having a hydroxy group at a terminal thereof and an isocyanate compound having two or more isocyanate groups per molecule; and
a hydroxy group of a hydroxyalkyl (meth)acrylate,

wherein no tin compound is used as a catalyst in these two addition reactions.

7. (New) The method according to claim 5, wherein the urethane (meth)acrylate, which is a main component of said ultraviolet-curing composition, is a product of an addition reaction, using an organic zinc compound or an amine compound as a catalyst, between:

an isocyanate group of an isocyanate oligomer, which is prepared, by using an organic zinc compound or an amine compound, from a polyester having a hydroxy group at a terminal or

in a side chain thereof and an isocyanate compound having two or more isocyanate groups per molecule; and

a hydroxy group of a hydroxyalkyl (meth)acrylate,

wherein no tin compound is used as a catalyst in these two addition reactions.

8. (New) The method according to claim 5,

wherein the polyurethane (meth)acrylate, which is a main component of said ultraviolet-curing composition, is a product of an addition reaction, using an organic zinc compound or an amine compound as a catalyst, between:

an isocyanate group of a polyether/polyester copolymerized isocyanate oligomer compound, which is prepared by an addition reaction among a polyester having a hydroxy group at a terminal or in a side chain thereof, a polyether having a hydroxy group at a terminal thereof, and a diisocyanate compound having two or more isocyanate groups per molecule; and a hydroxy group of a hydroxyalkyl (meth)acrylate,

wherein no tin compound is used as a catalyst in these two addition reactions.

9. (New) The method according to claim 5, wherein the ultraviolet-curing composition forms a flange gasket of a hard disk drive housing case.

10. (New) The method according to claim 5, wherein the ultraviolet-curing composition fixes a cap seal to a hard disk drive spindle motor.

11. (New) The method according to claim 5, wherein the ultraviolet-curing composition fixes a magnetic head of a hard disk drive to a supporting arm.

12. (New) The method according to claim 5, wherein the ultraviolet-curing composition fixes a packing or packings in a housing case of a hard disk drive assembly.

13. (New) The method according to claim 5, wherein the ultraviolet-curing composition bonds substrates to connectors in the hard disk drive assembly.

14. (New) The method according to claim 5, wherein the hard disk drive assembly comprises at least the following components:

a hard disk for storing data;

a spindle motor for rotating the hard disk;

a cap seal affixed to the spindle motor;

a movable read/write magnetic head or heads positioned relative to the hard disk such that data may be written on or read from the hard disk using the magnetic head;

and a housing case for the hard disk, the spindle motor and the magnetic head.